

Before The  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554

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FEDERAL COMMUNICATIONS COMMISSION  
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In the Matter of )  
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Amendment of the Commission's )  
Rules Regarding the 37.0 - 38.6 GHz )  
38.6 - 40.0 GHz Bands )  
)  
Implementation of Section 309(j) )  
of the Communication Act -- )  
Competitive Bidding, 37.0 - 38.6 GHz )  
and 18.6 - 40.0 GHz )

ET Docket No. 95-183  
RM-8553

PP Docket No. 93-253

To: The Commission

**COMMENTS OF GHz EQUIPMENT CO., INC.**

GHz Equipment Co., Inc. ("GEC") hereby submits comments in response to the Commission's *Notice of Proposed Rulemaking and Order ("NPRM")*, adopted December 15, 1995 in the captioned proceeding.

I. *Introduction*

GEC is an equipment manufacturer, systems integrator and, as the developer of Fiberless Optics Technology,<sup>1</sup> has been a leader in millimeter wave technology for the last several years. GEC has given particular focus to developing broadband equipment at 39 GHz for distribution of video, voice and data services. We have been an active participant in private and regulatory efforts to help shape policy, rules and regulations for the allocation of spectrum to service providers.

In addition to manufacturing, GEC's experience includes the planning of high frequency microwave systems for use in education. GEC has assisted a regional telephone company in the

<sup>1</sup> Patent pending.

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conceptualization and design of a plan to interconnect thousands of public schools, libraries and other institutions to a statewide network for access to the National Information Infrastructure ("NII"). 39 GHz applications filed by GEC set forth the exciting details of this proposal, which is an outstanding example of Vice-president Gore's call for private industry initiatives in the service of education to create "high-tech links" between schools and the NII. GEC's applications articulate a detailed plan to establish a communications framework with channel capacity to accommodate fully interactive distance learning. Our calculations demonstrated that with sufficient band width, the system can offer two-way interactive video sessions at reasonable rates of compression. The applications also made clear that the environment of users for the proposed services existed already, in the form of hundreds of public schools, libraries and community colleges within the various service areas proposed in the application -- in effect, a pre-existing network of transmission path and service points. Indeed, it is a distinguishing feature of GEC's spectrum needs analysis that the communications paths and required channel capacity are not unknown or speculative. They are determined at the threshold by the location and program requirements of existing public schools, libraries, and community colleges within the markets areas.

The selection of the 39 GHz spectrum for this purpose was done in careful consultation with the Commission's staff. The details of GEC's plans were set forth in meetings held with Commission personnel in two different bureaus and with the Commissioners' offices. All those who were briefed about the project endorsed it. Vice-president Gore's Office reviewed and enthusiastically applauded our clients' plans in meetings we held with his top telecommunications advisor.

In reliance upon that early, unequivocal affirmation by the Commission that GEC's applications, as proposed, would further a compelling public interest, GEC has worked painstakingly for nearly two years to obtain the spectrum necessary to carry out its business plan. This effort has been undertaken at no small price. GEC has dedicated most of its staff and most of its financial resources to the development of this project -- an outlay exceeding two million dollars.

For this reason, GEC is understandably concerned that the Commission's recent actions with respect to the 39 GHz spectrum could have a severely detrimental impact on GEC's viability and its ability to effectuate ultimately the program of development which the Commission had earlier so enthusiastically endorsed. We are also concerned, more generally, that the FCC's decision to suspend the processing of 39 GHz applications and to stop accepting amendments designed to eliminate mutual exclusive conditions has skewed the developing 39 GHz marketplace against incumbent 39 applicants. We strongly encourage the Commission to adopt rules that treat incumbent 39 GHz licensees consistently with licensees who obtain spectrum at 37 and 39 GHz through the auctions process. Undue regulatory interference with markets that already have proven to have viability, as evidenced by the variety of applications proposed in pending and granted 39 GHz applications, will only harm the public interest. Although the *NPRM* focuses on backhaul and backbone services for personal communications and commercial mobile radio operations, other applications currently exist for the spectrum and the marketplace will create further services that will utilize this spectrum. GEC encourages the Commission to adopt rules that allow for flexibility and encourage technological growth. Regulations should be limited principally to those needed to avoid harmful interference between licensees.

## II. *Build-out Requirements*

The Commission has asked for comments on construction and build-out requirements for incumbent 39 GHz licensees, NPRM at ¶105, tentatively proposing a period of 18 months from the adoption of a Report and Order for a licensee to certify that it has constructed a minimum average of four permanently installed and operating links per 100 square kilometers or approximately one link per 10 square miles of the licensed service area for each licensed channel block. We do not see that a similar construction requirement was specified for 37 and 39 GHz licensees that receive their licenses by auction.<sup>2</sup> The Commission should clarify that the build-out requirement will be consistent. Using the build-rate noted above, over 2,631,000 links would be required during the 18 month period. At the current cost of \$10 thousand per link, the investment would be over \$26 billion. Even assuming volume would bring the cost down to one-fourth that amount, the investment requirement would still be in excess of \$6.5 billion. It would not be possible to meet this kind of demand under current technical and market conditions, nor to arrange financing of that degree within the available time frame.

For this reason, GEC is opposed to the proposed build-out requirements. They would be impossible of fulfillment and they would not allow sufficient time for the marketplace to determine the best uses for the spectrum and for equipment manufacturers to develop equipment to efficiently respond to these needs. For a license holder with a rectangular market area the size allowed under the current rules, merely one channel block would require the construction of 1,036 links to maintain a license. Thus, a more realistic and workable alternative might be the Commission's "substantial service" formula. See NPRM at ¶98.

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<sup>2</sup> NPRM at ¶98.

### III. *Processing of Pending 39 GHz Applications*

For the reasons detailed in the Petition for Reconsideration and Emergency Request for Stay filed by Commco L.L.C., Plaincom, Inc. and Sintra Capital Corporation's ("Commco Request")<sup>3</sup>, supported in comments by GEC's, we strongly urge the Commission to continue processing 39 GHz applications. Processing should continue on those applications which are not mutually exclusive as well as those for which mutual exclusivity can be resolved through technical and other negotiated settlements within 90 days of the date of adoption of the Report and Order in this proceeding. GEC's position regarding amendments aimed at resolving mutual exclusivity is consistent with the Congress' mandate for spectrum auctions. In the Omnibus Budget and Reconciliation Act of 1993 Congress clearly expressed its intent that applicants should be allowed to voluntarily resolve mutual exclusivity cases by retaining the provisions of Section 309(j)(6)(E) of the Telecommunications Act of 1934, as amended (the "Act"). If the Commission were to inhibit voluntary conflict resolution efforts it would violate this congressional mandate.

### IV. *Channelization*

GEC urges the Commission to adopt a channelization plan and technical rules which allow technical advances to maximize the efficient use of this spectrum and thus accommodate an array of services, including point-to-multipoint. This flexibility will allow the marketplace, driven by rapidly developing technical advances, to produce the most efficient and varied use of the spectrum. GEC supports a channel pattern separated by 700 MHz, but which will allow an

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<sup>3</sup> On January 16, 1996, Commco, along with other 39 GHz applicants, filed an Emergency Request for Stay requesting that the Commission immediately lift its interim freeze on the processing of mutually exclusive applications, including amendments thereto, to establish new facilities in the 39 GHz frequency band. The stay was requested pending action on a related Petition for Reconsideration filed by the same parties in connection with the freeze.

applicant to apply for the spectrum in such a way that the channel pairs are contiguous, as permitted under the current 39 GHz rules.<sup>4</sup> Using present technical capabilities, equipment cost can be cut in half for a high volume link for a college or university application. The unmatched channels at 37 GHz should be left so that they can be utilized together. The Commission suggests, and GEC agrees, that when adjacent channels are aggregated, equipment should be permitted to operate over the full channel block aggregation without restriction. See *NPRM* at ¶ 115.

#### V. *Technical Rules*

GEC supports the following features of the *NPRM* relating to proposed technical rules: The Commission should adopt only those technical standards required to minimize interference between licensees; the Commission should abolish the limitation on maximum transmitter power and increase the maximum EIRP to +55 dBW; the Commission should adopt a 0.0017 frequency tolerance for equipment at both 37 and 39 GHz frequency bands; and the Commission should attempt to assure spectrum efficiency with the requirement of 1 Bps/Hz. See *NPRM* at ¶115.

#### VI. *Other Issues.*

1. *Substitutibility of Spectrum.* GEC supports the position that the 37 and 39 GHz service is not a discrete market. We urge the Commission to adopt rules which result in the greatest flexibility for the use of this spectrum, including allowing the spectrum to be augmented by other substitutable spectrum. In addition, the Commission should permit 39 GHz paths to be used for services to be implemented in frequency ranges above 40 GHz.

2. *License Term and Renewal Provisions.* GEC supports the Commission's proposal to establish the term of licenses for both 37 and 39 GHz bands at 10 years with a renewal

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<sup>4</sup> See 47 C.F.R. § 21.701(f).

expectancy. *NPRM* at ¶ 97. The Commission should clarify that the same license term and renewal expectancy apply to incumbent 39 GHz licenses. This will give time to develop and deploy equipment for a wide array of services. To fully develop 37 and 39 GHz networks will require substantial commitments of capital. Financial backers should have a reasonable expectation of renewal once they have funded a system that is providing a substantial public service.

3. *Alternative Licensing Proposals.* GEC vigorously opposes any licensing proposal that would initially grant eligibility only to PCS and other mobile service providers. *NPRM* at ¶102. Such a proposal would be predicated on the assumption that applicants in those services have greater needs than other potential users, which we categorically reject. There would be no reasonable basis for that assessment.

4. *Proposed Use of Auctions.* GEC agrees with the Commission's proposed award of unapplied-for spectrum through the auction process for both the 37 and 39 GHz bands. See *NPRM* at ¶ 104. We support the use of the same auction procedures used in PCS, *i.e.*, simultaneous multiple-round auctions. GEC *disagrees* with the proposal regarding the sequencing of 37 and 39 GHz license actions. *NPRM* at ¶ 104. We encourage the Commission to auction all of the 37 GHz licenses first. The Commission should postpone 39 GHz auctions until the it has completed the processing of pending 39 GHz applications.

#### IV. *Conclusion*

The FCC should not take any action in this proceeding that would compromise or undo the efforts of pending 39 GHz applicants. These applications were filed pursuant to existing rules, and with a reasonable expectation that the applications would be processed according to those rules. Moreover, many 38 GHz applicants and licensees have expended significant resources to

develop well-conceived business plans, the success of which will turn on the timing of FCC action on these pending proposals. Prospectively, we urge the Commission in the resolution of the *NPRM* to be guided by an overriding purpose to adopt rules sufficiently flexible to accommodate rapid technological developments and market dynamics.

Respectfully submitted,

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